

Remarks

Claims 19-38 have been amended. Previously withdrawn claims 1-18 and 39-62 have been canceled. Claims 63-65 have been added. Claims 19-38 and 63-65 are now in the case.

I. Supplemental IDS

A supplemental IDS and form 1449 is enclosed along with copies of the patents listed. A credit card payment form is enclosed for \$255.00 (\$180.00 for the supplemental IDS and \$75.00 for extra claims).

II. Objections to Claims 17 and 24

Claims 17 and 24 were previously objected to. Claim 17 has been canceled. Claim 24 has been amended and has been corrected as suggested by the examiner.

III. Rejections under 35 U.S.C. 103 based on Hasegawa, U.S. Patent No. 6,710,762 and Shinagawa, U.S. Patent No. 4,323,374

Previous claims 19-20, 32-34, and 36-38 were rejected under 35 U.S.C. 103 based on Hasegawa. Previous claims 21-31 and 35 were rejected under 35 U.S.C. 103 based on Hasegawa in view of Shinagawa. The applicant respectfully does not agree with the rejections, however, claims 19-38 have been amended to more distinctly claim the present invention in one or more embodiments. Claim 19 now specifies:

19. A stage lighting apparatus comprising:
an image projection lighting device for operation in theatrical fog comprising:
a base housing;
a yoke;
a lamp housing;
wherein the lamp housing is positionable in relation to the yoke by a motor;
wherein the yoke is positionable in relation to the base by a motor;

a processing system;
a communications port;
the lamp housing comprising:
 a video projector,
 a filter system which has a first inlet and wherein the filter system is
comprised of a first cooling fan, a first air filter and a second air filter,
 the video projector comprising:
 a video projector housing with a second air inlet, a second cooling fan, a
light valve, and a lamp,
 wherein cooling air external to the lamp housing enters the lamp housing
through the first air inlet to pass through the first air filter to form a first filtered
air;
 wherein the first filtered air is passed through the second air filter to form
a second filtered air;
 wherein the first air filter filters theatrical fog particles greater than ten
microns;
 wherein the second air filter filters theatrical fog particles smaller than
one hundred microns; and
 wherein the second filtered air is passed through the second air inlet to provide
cooling air for the video projector.

The present invention in one or more embodiments, provides an image projection lighting device 10. (Present application, Fig. 2). Image projection lighting devices are operated in theatrical fog. (Present application, pg. 3, paragraph 3).

"During a theatrical presentation the Image projection lighting devices are often operated in conjunction with theatrical fog generating devices. The theatrical fog or smoke generating devices are used to create an airborne haze that can be used as a projection surface creating three dimensional imagery. The fog generating devices create the airborne haze by propelling minute particles into the air which can remain suspended in the air for a considerable time. The minute particles are commonly created by the fog generating devices by atomization of oils or glycols. The glycol or mineral oil particles (referred to herein as fog particles) can each range in size from between twenty microns to below .1 micron." (Present application, pg. 3, paragraph 3)

In at least one embodiment, a base housing 210, a yoke 220, and a lamp housing 230 are provided. (Present application pg. 10, last paragraph). The lamp housing 230 is positionable in relation to the yoke 220 by a motor and the yoke 220 is positionable in relation to the base housing 210 by a motor. (Id.) A processor 316, also called a processing system, is provided. (Present application, pg. 11, second paragraph). A communications port 312 is disclosed.

(Present application, Fig. 3, pg. 11, second paragraph)

The lamp housing 230 includes a video projector 100 and a filter system 160. (Present application, Fig. 1, pg. 5, last paragraph – p. 6, first paragraph). The filter system 160 has a first inlet 164i and the filter system includes a first cooling fan 162, a first air filter or prefilter 160a and a second air filter or secondary filter 160b. (Present application, pg. 8, Fig. 1).

The video projector 100 comprises a video projector housing 103 with a second air inlet or air inlet vent 172 (Present application, Fig. 1, pg. 6, first paragraph), a second cooling fan, i.e. internal fan not shown (Present application, pg. 7, ln. 11), a light valve 107, (Present application, pg. 5), and a projection lamp 108. (Present application, pg. 5, Fig. 1) Cooling air external to the lamp housing 230 enters the lamp housing 230 through the first air inlet 164i to pass through the first air filter 160a to form a first filtered air. (Present application, Fig. 1) The first filtered air is passed through the second air filter 160b to form a second filtered air. (Id.) The first air filter filters theatrical fog particles greater than ten microns (Present application, pg. 8, lns. 15-18). The second air filter filters theatrical fog particles greater than one micron, (Present application, pg. 16, first paragraph). The second filtered air passes through the second air inlet 172 to provide cooling air for the video projector 100.

Hasegawa is directed towards a liquid crystal projector that can take the place of a display for a home television or a personal computer. (Hasegawa, col. 1, lns. 10-20).

Hasegawa does not disclose a stage lighting apparatus or an image projection lighting device for operation in theatrical fog. Hasegawa does not disclose a lamp housing positionable in relation to a yoke by a motor or a yoke positionable in relation to a base by a motor.

Although Hasegawa does disclose a filter, that filter operates on large particles such as dust and as disclosed in the background of the present invention, prior art filters for video projectors were not sufficient to deal with theatrical fog particles:

"When lighting devices such as image projection lighting devices contain complex optical and electronic components the fog particles may be drawn through the cooling system and may condense on the various optical components diffusing the projected image or shortening the life of the components. If a video projector is used for a component of the image projection lighting device, the video projector may often contain a filter system of its own. The filter system of the video projector offers very little protection for fog particles since most video projector filters rarely are effective on particles below ten microns such as those found in fog particles." (Present application, background of the invention, pg. 3, last paragraph – pg. 4, first paragraph).

In addition, Hasegawa does not disclose a first air filter for filtering certain particles and a second air filter for filtering other particles. Hasegawa does not disclose a second air inlet receiving second filtered air which has passed through first and second air filters to provide cooling air to a video projector. Hasegawa does not disclose many limitations of claim 19 and Hasegawa does not suggest the many limitations of claim 19 or the combination of limitations of claim 19.

Shinegawa provides an air filter which is a combination of an electret filter and a non-electret filter. (Shinegawa, col. 2, lns. 19-21). Particles having a diameter larger than .3 microns are collected by the non-electret conventional filter while ultrafine particles are collected by the electret filter. (Shinegawa, col. 3, lns. 49-62). Shinegawa does not disclose a stage lighting apparatus or an image projection lighting device for operation in theatrical fog. Shinegawa does not disclose a lamp housing positionable in relation to a yoke by a motor or a yoke positionable in relation to a base by a motor. Shinegawa does not disclose a second air inlet for receiving a second filtered air which has passed through first and second air filters to provide cooling air to a video projector. Shinegawa does not disclose many limitations of claim 19 and Shinegawa does not suggest many limitations of claim 19 or the combination of limitations of claim 19.

It is not disclosed or suggested to combine Shinegawa and Hasegawa. A combination of Shinegawa and Hasegawa would not satisfy claim 19.

Claim 19 is submitted to be allowable for at least the foregoing reasons. Claims 21-28, and 34-38 are dependent on claim 19 and are also submitted to be allowable for at least the foregoing reasons.

Claim 20 as been amended and now specifies:

20 A stage lighting apparatus comprising:

an image projection lighting device for operation in theatrical fog comprising:

a base housing;

a yoke; and

a lamp housing;

wherein the lamp housing is positionable in relation to the yoke by a motor;

wherein the yoke is positionable in relation to the base by a motor;

further comprising a processing system;

a communications port; and

a display device;

the lamp housing comprising:

a cooling fan,

a first air inlet,

a first air filter,

a lamp, and

a light valve;

the base housing comprising a video monitor display device;

wherein the cooling fan, the air first inlet and the first air filter together form at least part of a filtration system for filtration of theatrical fog particles;

wherein cooling air external to the lamp housing enters the lamp housing through the first air inlet to pass through the first air filter to form a first filtered air; and

wherein a first communication as to a status of the first air filter to a technician is accomplished by the technician viewing the video monitor display device.

As previously asserted, Hasegawa does not disclose a stage lighting apparatus or an image projection lighting device for operation in theatrical fog. Hasegawa does not disclose a lamp housing positionable in relation to a yoke by a motor or a yoke positionable in relation to a base by a motor. Hasegawa does not disclose a filtration of theatrical fog particles. Hasegawa discloses that "B2" is the temperature of the liquid crystal panel side when the dirt of the filter 14 is severe and the change of the filter 14 is required. (Hasegawa, col. 12, Ins. 37-39) Hasegawa is concerned with dirt particles not theatrical fog, such as atomized oils or glycols

occurring in theatrical fog. Hasegawa does not disclose many limitations of claim 20 and Hasegawa does not suggest the many limitations of claim 20 or the combination of limitations of claim 20.

Shinegawa does not disclose a stage lighting apparatus or an image projection lighting device for operation in theatrical fog. Shinegawa does not disclose a lamp housing positionable in relation to a yoke by a motor or a yoke positionable in relation to a base by a motor. Shinegawa does not disclose many limitations of claim 20 and Shinegawa does not suggest many limitations of claim 20 or the combination of limitations of claim 20.

It is not disclosed or suggested to combine Shinegawa and Hasegawa. A combination of Shinegawa and Hasegawa would not satisfy claim 20.

Claim 20 is submitted to be allowable for at least the foregoing reasons. Claims 29-33 and 63-65 are dependent on claim 20 and are also submitted to be allowable for at least the foregoing reasons.

IV. Conclusion

Claims 19-38 and 63-65 are respectfully submitted to be in a condition for allowance. A credit card payment form for \$255.00 is enclosed (\$75.00 for three extra claims over twenty and \$180.00 for supplemental IDS). Favorable reconsideration of this application, as amended, is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Walter J. Tencza Jr.", written in a cursive style.

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